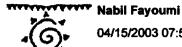
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04/15/2003 07:54 AM

To: sdsmit, rswill1 cc: Sandra.Bron, Kevin\_de\_la\_Bruere Subject: Review of Apparent Effects Threshold and Toxic Units Approaches -Sauget Area 2

Steve and Rich,

Please find attached the comments from the USEPA review of Appendix B to Solutia's March 6 Response to Comments letter regarding the Remedial Design Work Plan and Prefinal Design for the proposed Groundwater Migration Control System for the Sauget Area 2 Site, groundwater operable unit. Attachment B to Solutia's March 6 letter presents an Apparent Effects Threshold (AET) and a Toxic Units (TU) approache for establishing performance monitoring action levels for sediment and surface water. Please submit your responses within 21 days of receipt of this e-mail. If there are any questions, please contact me at 312-886-6840.

Sincerely,

Nabil Fayoumi Remedial Project Manager Superfund Division

AET-TU-TECH-MEMO.do

## Review of Proposed Approach for Establishing Performance Monitoring Action Levels for Sauget Area 2 Ecological Risk Assessment

PREPARED FOR:

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PREPARED BY:

CH2MHILL

COPIES:

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Steve Petron/CH2M HILL

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DATE:

April 10, 2003

CH2MHILL has reviewed Appendix B to the Response to Comments on Remedial Design Work Plan provided by Solutia in their letter to USEPA dated March 6, 2003. Our comments are provided below along with some suggestions for improving the explanations of the Apparent Effects Threshold (AET) approach for setting performance monitoring action levels for contaminated sediments. The proposed Toxic Units (TU) approach for setting performance monitoring action levels for contaminated surface water is satisfactory.

## **General Comments:**

- 1. It is believed that in general the **AET approa**ch description is accurate and appropriate. However, it is somewhat difficult to **understand** and some revision may be necessary to improve clarity.
- 2. There are no comments pertaining to the TU approach.

## **Specific Comments:**

- 1. <u>Expand discussion of the AET Approach</u>: It is recommended that the background of the AET approach be better clarified and that references to the research used to establish this approach be cited.
- 2. <u>Clarify information pertaining to the determination of "effect" and "no effect" samples/data:</u> Since the basis for the AET approach is to determine which samples are associated with effects (i.e., impacts or toxicity) or no effects for representative test organisms it is important to highlight the methods used to establish these distinctions. Accordingly:
- Specify the toxicity testing protocol used to evaluate the sediment samples (i.e., cite protocol and specify the exposure duration and type of test)
- Highlight the steps used to determine "effect" or "no effect" samples, including:
  - Endpoints used to determine test species response
  - The statistical methods (e.g., **T-test** compared to control or reference response)
  - The statistical significance level (e.g.,  $\alpha = 0.05$ )

- 3. <u>Revise or remove Table 1:</u> Table 1, as it stands, adds confusion to the text and over complicates the AET approach section. Since an AET is equal to the highest concentration in "no effect" (unimpacted) samples, ranking and consideration of effects data is irrelevant because impacts classification is binary (effect or no effect see Specific comment #2).
- Once a "no effect" set of samples is determined, it must be simply stated that the AET
  concentration of a particular COPC is equal to the maximum concentration of that COPC
  in those samples
- If it is determined that a table is **still warrant**ed to aid the explanation, use of a hypothetical scenario similar to that **shown** below might suffice:

|    | Concentrat |            |             |
|----|------------|------------|-------------|
|    | Chemical A | Chemical B | (toxicity)? |
| 2  | 13         |            | N           |
| 4  | 8          | 5          | N           |
| 6  |            | 5          | N           |
| 7  | 7          | 2          | N           |
| 9  | 11         | 4          | N           |
| 1  | 49         | 155        | Υ           |
| 3  | 15         | 45         | Y           |
| 5  | 44         | 2          | Y           |
| 8  | 29         | 6          | Y           |
| 10 | 57         | . 89       | Y           |